

Wildlife Health: West Nile Virus Necropsy Surveillance Summary 2003

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Abstract

Wildlife biologists, conservation wardens, and the general public submitted nearly 700 specimens to the Wildlife Health Program for West Nile virus (WNV) necropsy surveillance in 2003. Testing was conducted by the Wisconsin Veterinary Diagnostic Laboratory, the Wisconsin State Laboratory of Hygiene, and the Marshfield Clinical Research Foundation (MCRF). Specimen submission was facilitated by the Wisconsin Department of Public Health and the USDA-Wildlife Services hotline staff.

Mosquitoes are the primary vector for WNV transmission. Wisconsin mosquito activity during 2003 occurred from May until early November. Infrequent rains and prolonged hot temperatures were common throughout the state, perhaps causing a decline in mosquito productivity. Plentiful rains occurred throughout much of the state from mid-August through October, and the majority of WNV positive cases were diagnosed during this time.

Corvid birds (crows, blue jays, ravens) were the focus for WNV testing, as they appear to be the bird species most sensitive to WNV mortality, and hence can be indicators of human exposure risk. Results of the Wisconsin 2003 testing found 145 positive crows of 301 tested (48%), 17 positive blue jays of 77 tested (22%), and no positive common ravens of 4 tested.

Due to concerns about possible impacts of WNV on other wildlife species, in 2003 the WDNR and the MCRF tested tissues for the presence of WNV in other selected species: 69 bald eagles, 43 other raptors, 129 perching birds, 25 waterbirds, 24 upland game birds including mourning doves, and 32 mammals. WNV was detected in 11 of 322 non-corvid samples tested. Evidence of the virus was found in the tissues of 1 bald eagle, 2 (of 11) red-tailed hawks, 1 (of 17) robins, 1 (of 2) bluebirds, 1 (of 43) common grackles, 1 (of 6) cedar waxwings, 1 (of 9) woodpeckers, and 2 (of 5) chickadees. Cotton-tailed rabbits, gray squirrels, gray fox, muskrat, and little and big brown bats were tested for WNV in their tissues. Only 1 (of 8) brown bats had WNV in the tissues. Results for each county are listed below. A report detailing 2003 WNV exposure for a variety of species, based on serologic antibody measurement, will be included in the August Surveys Report.

2003 West Nile Virus Tissue Surveillance Results

County	Species Tested	WNV Positive/ #Sampled	County	Species Tested	WNV Positive/ #Sampled
Adams	American crow	5/6	Barron	American crow	2/4
	Blue jay	1/2		Blue jay	0/3
	Golden eagle	0/1		Downy woodpecker	1/1
	Bald eagle	0/1		Northern cardinal	0/1
	Cedar waxwing	0/1		House Finch	0/1
	Little brown bat	0/1		Common grackle	0/1
Ashland	American crow	1/3	Bayfield	Bald eagle	0/1
	Common grackle	0/1		American robin	0/1
	American pine marten	0/1			

County	Species Tested	WNV Positive/ #Sampled	County	Species Tested	WNV Positive/ #Sampled
Brown	American crow	2/6	Dodge	American crow	1/6
	Blue jay	0/1		Blue jay	0/2
	Double-crested cormorant	0/2		Sandhill crane	0/1
	Cooper's hawk	0/1		Barn swallow	0/1
	Sharp-shinned hawk	0/1		American robin	0/2
	American kestrel	0/1		Eastern meadowlark	0/1
	American robin	0/1	Door	Blue jay	0/1
	Common grackle	0/2		Double-crested cormorant	0/2
Buffalo	American crow	0/2		Yellow-bellied sapsucker	0/1
	Red-tailed hawk	0/1		Eastern bluebird	1/1
	Mourning dove	0/1		American robin	0/1
	House finch	0/1	Douglas	American crow	0/2
Burnett	American crow	2/2		Bald eagle	0/2
	Blue jay	0/1		Ring-billed gull	0/7
	Bald eagle	0/4		Common tern	0/2
Calumet	American crow	4/6	Dunn	American crow	5/9
Chippewa	American crow	5/6		Blue jay	1/1
	Blue jay	0/2		American robin	1/1
Clark	American crow	0/1	Eau Claire	American crow	13/26
	Great horned owl	0/1		Blue jay	1/3
Clolumbia	American crow	3/3		Bald eagle	0/1
	Bald eagle	0/4		American goldfinch	0/1
	American kestrel	0/1		Common grackle	0/1
	Great horned owl	0/1		White-tailed deer	0/1
	Gray squirrel	0/1	Florence	Bald eagle	0/2
	Cottontail rabbit	0/1	Fon du Lac	American crow	1/3
Crawford	Blue jay	0/1		Blue jay	0/2
				Ruby-throated hummingbird	0/1
Dane	American crow	7/24	Forest	House finch	0/1
	Blue jay	0/2		Common grackle	0/1
	Cooper's hawk	0/2	Grant	Red-tailed hawk	0/1
	Red-tailed hawk	0/4		Bald eagle	0/1
	Great horned owl	0/2		Peregrine falcon	0/1
	Barred owl	0/1		Common grackle	1/1
	Mourning dove	0/1	Green	American crow	1/2
	Black-capped chickadee	0/2		Eastern phoebe	0/1
	American robin	0/1		Common grackle	0/1
	House finch	0/1	Green Lake	Blue jay	1/2
	Common grackle	0/7		Chimney swift	0/1
	Little brown bat	0/1		Ruby-throated hummingbird	0/1
	Gray squirrel	0/4			

County	Species Tested	WNV Positive/ #Sampled	County	Species Tested	WNV Positive/ #Sampled
Iowa	American crow	1/1	Marathon	American crow	3/8
	Bald eagle	1/3		Blue jay	0/1
	Red-tailed hawk	0/1		Great blue heron	0/1
Iron	American crow	0/1		Bald eagle	0/2
	Green heron	0/1		Mourning dove	0/1
	Ruffed grouse	0/2		American catbird	0/1
Jefferson	American crow	0/3		Red-eyed vireo	0/1
	Wood thrush	0/1		House finch	0/1
Juneau	Blue jay	0/1		Common grackle	0/1
	Bald eagle	0/1		Gray squirrel	0/1
Kenosha	American crow	5/7	Marinette	American crow	1/4
	Blue jay	0/2		Common raven	0/2
	Great blue heron	0/2		Red-tailed hawk	0/1
	Common grackle	0/3		Bald eagle	0/4
	Little brown bat	0/1		Mourning dove	0/1
Kewaunee	Eastern kingbird	0/1		Rose-breasted grosbeak	0/2
				Red-winged blackbird	0/1
La Crosse	American crow	5/13	Marquette	American crow	0/1
	Blue jay	1/2		Bald eagle	0/1
	Common grackle	0/1		Little brown bat	1/1
Lafayette	American kestrel	0/1	Menominee	Red-tailed hawk	1/1
Langlade	American kestrel	0/1	Milwaukee	American crow	2/6
	Mourning dove	0/2		Blue jay	0/3
	American robin	0/1		American kestrel	0/2
Lincoln	American crow	0/2		Mourning dove	0/1
	Blue jay	0/2		Common yellowthroat	0/1
	Bald eagle	0/5		Common grackle	0/1
	American woodcock	0/1		Red-winged blackbird	0/1
	Big brown bat	0/1		Gray squirrel	0/3
Manitowoc	American crow	1/1	Monroe	American crow	2/2
	Blue jay	0/3		Blue jay	0/1
	Wild turkey	0/1		Great horned owl	0/1
	Great horned owl	0/1		Common grackle	0/1
	Common flicker	0/2	Oconto	American crow	1/1
	Common grackle	0/2		Blue jay	0/2
	Gray squirrel	0/1		Sharp-shinned hawk	0/2

County	Species Tested	WNV Positive/ #Sampled	County	Species Tested	WNV Positive/ #Sampled
Oneida	American crow	3/5	Rock	American crow	4/15
	Common raven	0/1		Blue jay	1/1
	Bald eagle	0/16		Ruby-throated hummingbird	0/2
	Ruffed grouse	0/2		Black-capped chickadee	1/1
	Mourning dove	0/1		Common grackle	0/2
	Pileated woodpecker	0/1		Gray squirrel	0/1
	American robin	0/1	Rusk	American crow	0/1
	Mourning warbler	0/1			
	Rose-breasted grosbeak	0/1	Sauk	American crow	1/3
Outagamie	Common grackle	0/1		Blue jay	3/4
	American crow	9/22		Cooper's hawk	0/1
	Blue jay	0/3		Bald eagle	0/5
	Common raven	0/1		Great horned owl	0/1
	American kestrel	0/2		Gray squirrel	0/2
	Mourning dove	0/1		Muskrat	0/1
	Northern cardinal	0/1	Sawyer	American crow	1/5
	American robin	0/1		Bald eagle	0/1
	Mourning warbler	0/1		Black-billed cuckoo	0/1
	Rose-breasted grosbeak	0/1		Northern flicker	0/1
	Common grackle	0/1		Yellow-bellied sapsucker	0/1
Ozaukee	American crow	4/8		American robin	0/1
	Blue jay	1/2		Cedar waxwing	0/1
	Little brown bat	0/1		Chipping sparrow	0/1
Pepin	American crow	0/1	Shawano	American crow	3/4
	Gray fox	0/2		Rough-legged hawk	0/1
Pierce	American crow	1/2		Red-tailed hawk	0/1
	Blue jay	1/1		Red-shouldered hawk	0/1
	Common grackle	0/1		Bald eagle	0/1
Polk				Mourning dove	0/1
	Trumpeter swan	0/1	Sheboygan	American crow	5/10
Portage	American crow	5/9		Blue jay	0/2
	Blue jay	1/3		Mourning dove	0/1
	Northern goshawk	0/1		Tree swallow	0/1
	Cooper's hawk	0/1		Willow flycatcher	0/1
Racine	American crow	4/5		American robin	0/1
	Blue jay	1/3		Red-winged blackbird	0/2
	Sora	0/1	St. Croix	American crow	4/5
	Mourning dove	0/1		Blue jay	1/1
	Common grackle	0/1		House finch	0/3
Richland	Gray squirrel	0/1		Little brown bat	0/1
	Wild turkey	0/1	Taylor	Blue jay	0/1
	Sandhill crane	0/1		Common grackle	0/1
	Lincoln sparrow	0/1	Trempeleau	American crow	1/1
				Bald eagle	0/1

County	Species Tested	WNV Positive/ #Sampled	County	Species Tested	WNV Positive/ #Sampled
Vernon	Great blue heron	0/1	Waushara	American crow	0/1
	Gray squirrel	0/1		Blue jay	0/1
Vilas	American crow	0/1		Bald eagle	0/1
	Bald eagle	0/9		Common yellowthroat	0/1
	Common grackle	0/1	Winnebago	American crow	7/12
Walworth	American crow	5/6		Blue jay	1/2
	Blue jay	1/4		Great blue heron	0/1
	Wild turkey	0/1		Sharp-shinned hawk	0/1
	Great horned owl	0/1		Sora	0/1
	American robin	0/1		Mourning dove	0/1
	Common grackle	0/1		Swainson's thrush	0/1
Washburn	American crow	1/1		Cedar waxwing	1/1
	Bald eagle	0/1		Northern cardinal	0/1
	Eastern bluebird	0/1		American goldfinch	0/1
	Scarlet tanager	0/1		Common grackle	0/5
	House finch	0/1	Wood	American crow	6/7
	Common grackle	0/1		Blue jay	1/2
Washington	American crow	1/4		Sharp-shinned hawk	0/1
	Blue jay	0/1		Red-tailed hawk	1/1
	Great blue heron	0/1		Bald eagle	1/2
	Mourning dove	0/1		American kestrel	0/1
	Black-capped chickadee	1/1		Wild turkey	0/1
	Northern cardinal	0/1		American robin	0/1
	American goldfinch	0/1		Little brown bat	0/1
Waukesha	American crow	4/11		Cottontail rabbit	0/1
	Blue jay	1/5		Gray squirrel	0/1
	Mourning dove	0/1			
	Black-billed cuckoo	0/1			
	American robin	0/4			
	Cedar waxwing	0/1			
	Rose-breasted grosbeak	0/1			
	Indigo bunting	0/1			
	American goldfinch	0/1			
	Red-winged blackbird	0/1			
Waupaca	Eastern chipmunk	0/1			
	American crow	3/3			
	Blue jay	0/3			
	Common nighthawk	0/1			
	Ruby-throated hummingbird	0/1			
	Barn swallow	0/1			
	Northern cardinal	0/1			